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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: NEW THERAPEUTIC USE FOR A GROUP OF SULPHATED POLYSACCHARIDES

(57) Abstract: The present invention relates to the use of a sulphated polysaccharide in acid form or as a physiologically acceptable salt thereof, selected from the group consisting of inulin sulphate, gellan sulphate, pullulan sulphate, curdlan sulphate, alginic acid sulphate, laminarin sulphate, and pectin sulphate, for the preparation of a medicament for the treatment or prophylaxis of arthrosis in a mammal. Preferably, the sulphated polysaccharide is inulin sulphate, most preferably inulin polysulphate sodium salt. The present invention also relates to the use of a sulphated oligosaccharide derived from a polysaccharide selected from the group consisting of inulin, gellan, pullulan, curdlan, alginic acid, laminarin, and pectin, for the preparation of a medicament for the treatment or prophylaxis of arthrosis in a mammal.



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INTERNATIONAL SEARCH REPORT

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|---|---|--|
| A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A61P19/02 A61K31/737 | | |
| According to International Patent Classification (IPC) or to both national classification and IPC | | |
| B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 A61K A61P | | |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched | | |
| Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, CHEM ABS Data, BIOSIS, WPI Data, PAJ, EMBASE | | |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT | | |
| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | DATABASE CA 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; MINAMI, S. ET AL: "Veterinary-clinical uses of curdlan sulfate" XP002347885 retrieved from STN Database accession no. 1999:492587 abstract & KICHIN, KITOSAN KENKYU , 5(2), 166-167 CODEN: KKKEFB; ISSN: 1340-9778, 1999, ----- | 1-17, 19-25 |
| X | WO 03/006645 A (IMCLONE SYSTEMS INCORPORATED; BOHLEN, PETER; HICKLIN, DANIEL; KUSSIE,) 23 January 2003 (2003-01-23) paragraph '0085!; claims 12,15 ----- -/-- | 1-17, 19-25 |
| <div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex. </div> | | |
| ° Special categories of cited documents : | | |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>*&* document member of the same patent family</p> </div> </div> | | |
| Date of the actual completion of the international search <div style="text-align: center; font-weight: bold;">5 October 2005</div> | | Date of mailing of the international search report <div style="text-align: center; font-weight: bold;">19/10/2005</div> |
| Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016 | | Authorized officer <div style="text-align: center; font-weight: bold;">Blott, C</div> |

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | US 4 021 545 A (NAIR ET AL) 3 May 1977 (1977-05-03) column 4, line 16; claims ----- | 1-17, 19-25 |
| X | US 2003/181416 A1 (COMPER WAYNE D) 25 September 2003 (2003-09-25) paragraph '0053!; claims 1,40 ----- | 1-17, 19-25 |
| X | MIYAMOTO KEIICHI ET AL: "Novel plasma-separation dilayer gellan-gellan-sulfate adsorber for direct removal of extra domain A containing fibronectin from the blood of rheumatoid arthritis patients" INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES, vol. 30, no. 3-4, 18 June 2002 (2002-06-18), pages 197-204, XP009054555 ISSN: 0141-8130 abstract ----- | 1-17, 19-25 |
| X | EP 0 561 379 A (ASAHI MEDICAL CO., LTD) 22 September 1993 (1993-09-22) page 25, line 31 page 18, line 14 ----- | 1-17, 19-25 |
| X | US 4 699 900 A (BAYOL ET AL) 13 October 1987 (1987-10-13) claims ----- | 1-17, 19-25 |
| X | WO 92/13541 A (HOECHST AKTIENGESELLSCHAFT) 20 August 1992 (1992-08-20) page 8, paragraph 3; claims ----- | 1-17, 19-25 |
| X | WO 02/36132 A (LABORATOIRES GOEMAR S.A; YVIN, JEAN-CLAUDE; ALBAN, SUSANNE; FRANZ, GER) 10 May 2002 (2002-05-10) the whole document ----- | 1-17, 19-25 |
| E | WO 2005/054446 A (UNIVERSITEIT GENT; VERBRUGGEN, AUGUST; VEYS, ERIC) 16 June 2005 (2005-06-16) the whole document ----- | 1-17, 19-25 |

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 18
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 18

Claim 18 is not clear (Art. 6 PCT).
Carrageenans are natural polysulfated polysaccharides and the term "carrageenan polysulfate" used in claim 18 therefore is not clear (Art. 6 PCT).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

International Application No

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